

Terminal 4 Early Action Cleanup

Dear Portland Harbor Stakeholder,

One year ago, EPA distributed the Engineering Evaluation and Cost Analysis (EE/CA) for the Terminal 4 Early Action cleanup for public comment.

Because of high community interest and the complexity of the document, we extended the public comment opportunity twice. After the public comment period closed, we carefully considered the information that was presented to us to see if another alternative would offer equal advantages and if the proposed action could be modified to address concerns presented in public comments. Over the past four months, we also consulted with tribal governments who are working collaboratively with EPA on Portland Harbor.

Determining the best course of action required especially thorough deliberation by EPA, given that a number of people had strong feelings about a confined disposal facility (CDF) being constructed as part of the proposed alternative. We especially wanted to make sure that nearby residents of Linnton and St. John would be safe from exposure to contaminated sediments during the cleanup and in the future, even if there was a catastrophic earthquake or flood.

After completing my review, I have chosen the proposed action from the EE/CA, modified based on community concerns as the most responsible and protective course of action for Terminal 4. The attached fact sheet describes the changes we made to our original proposal and the basis for my decision.

I appreciate all the comments we received and I believe they have helped make the cleanup of Terminal 4 better and stronger.

Sincerely,

Dan Opalski
Director, Office of Environmental Cleanup

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EPA Makes Cleanup Decision for Terminal 4 Early Action

The cleanup plan selected for the Port of Portland Marine Terminal 4 will dredge approximately 115,000 cubic yards of contaminated sediments, cap 8.7 acres and monitor 10.9 acres for natural recovery. The dredged material will be placed in an on-site confined disposal facility (CDF).

EPA selected the action proposed by the Port of Portland in a May 2005 Engineering Evaluation and Cost Analysis (EE/CA) with changes based on public input. Changes include:

- using a public process to establish sediment disposal and acceptance criteria
- requiring additional earthquake design considerations for the CDF
- establishing a plan of action in case natural recovery areas are not producing the desired results
- adding specific mitigation goals for fish and wildlife.

The selected action reduces ecological and human health risks and minimizes the likelihood of sediment recontamination at Terminal 4. The selected action includes specific requirements to protect people and the environment in the short term during dredging, capping and CDF construction. Over the long term, contaminated sediment will be contained in an engineered disposal facility and in-place caps will reduce the risk of exposure to deeper contamination.

The selected cleanup action for Terminal 4 includes capping, dredging, building a confined disposal facility in slip 1, and monitoring natural recovery

The Selected Action by the Numbers

Volume to be dredged at Terminal 4:
115,000 cubic yards

Area to be capped:
8.7 acres

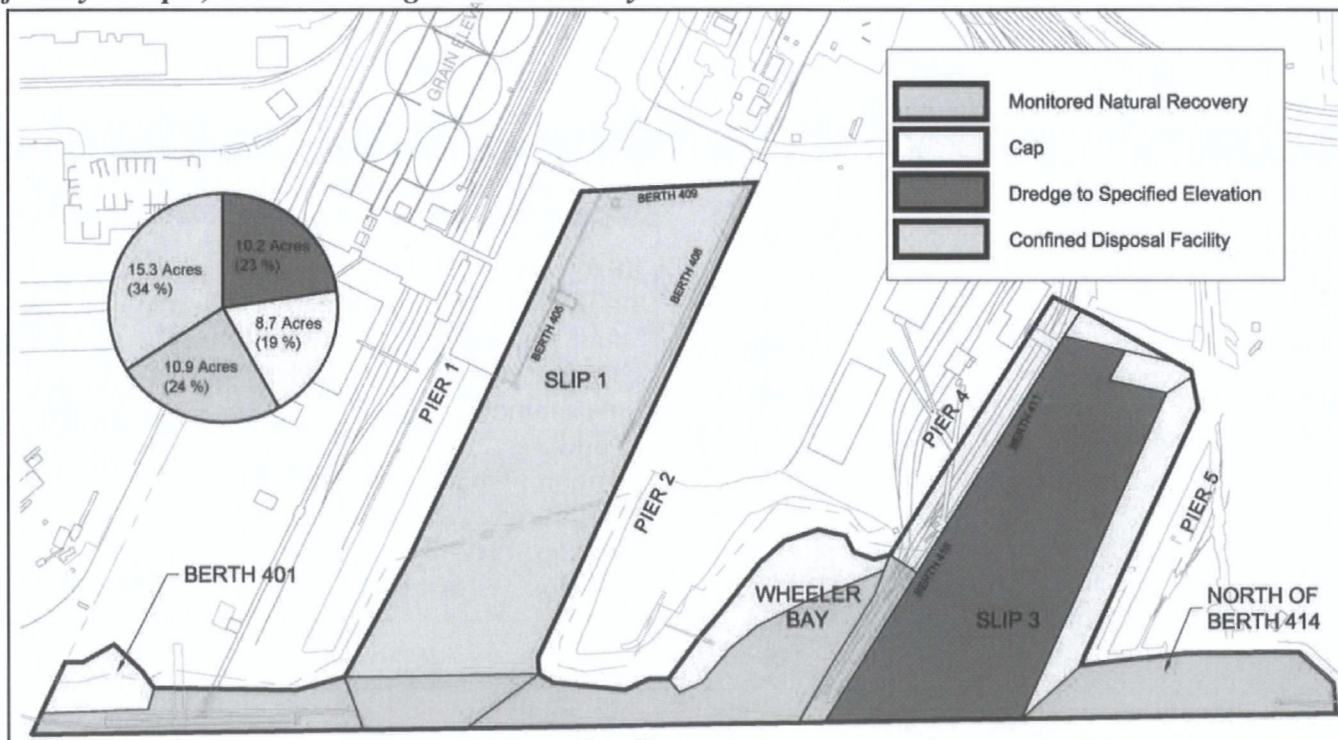
Area with monitored natural recovery:
10.9 acres

Total capacity of the confined disposal facility (including berm and caps):
940,000 cubic yards

Estimated excess sediment disposal capacity in the confined disposal facility:
560,000 cubic yards

Volume of material needed to construct the CDF berm:
138,500 cubic yards

The Action memo is available on the EPA website at <http://yosemite.epa.gov/r10/cleanup.nsf/sites/t4> or by request from **Judy Smith** at 503-326-6994.



What We Heard from the Community

Eighty-nine individuals, groups and businesses provided comments by letter, e-mail or spoken testimony during the 90-day comment period, which ran from May 6 to September 7, 2005.

Most commenters voiced concern or opposition to the construction of a confined disposal facility (CDF) in Terminal 4 Slip 1 and expressed concern about toxic materials being dumped on-site. Many people voiced concerns about the ability of the CDF to withstand a catastrophic event such as earthquake or flood. Many commenters from the nearby communities of St. Johns, Linnton and Cathedral Park, opposed a CDF because it is near their homes. Other concerns cited by more than one commenter included leaching, erosion or leaking, the effect on fish and wildlife habitat, unknown or unspecified risk, and costs and economics.

The second most frequent comments were about various aspects of the Engineering Evaluation and Cost Analysis. Several commenters questioned how the alternatives were ranked, the adequacy of the analysis or the cost of the EECA or

cleanup. Several comments identified missing information or requested additions they would like to see in the EE/CA.

Many commenters made general statements supporting EPA efforts to clean up the Willamette River, Portland Harbor or Terminal 4. Several commenters were concerned about how the cleanup decision for the Terminal 4 early action affected harbor-wide cleanup plans. Other commenters stated additional concerns about timing, cost, trust and monitoring.

Many commenters recommended that contaminated sediment dredged from the river be taken to a hazardous waste landfill. Other comments cited public involvement, risk reduction, dredging methods, capping and monitored natural recovery, economics, mitigation, future use, treatment technology, air, human health, human use, neighborhood concerns restoration, sediment, and water quality.

The full text of the comments along with EPA's response is available in the Responsiveness Summary for the Terminal 4 Early Action. This information is available on the web at: <http://yosemite.epa.gov/r10/cleanup.nsf/sites/t4>

Changes Made As a Result of Public Input

We made a number of changes to the selected action to respond to concerns and suggestions we received from the community during the public comment period:

- **Controlling What is Put Into The CDF** - A public process will be used to establish disposal and acceptance criteria for materials proposed for disposal in the CDF. Sediments with leachable contaminants and those that fail hazardous waste standards will not be allowed. No sediment from future cleanups outside of Terminal 4 will be designated for disposal in the CDF without public review and input.
- **Making Sure the CDF Will Withstand Earthquake and Flood** - The design of the CDF will include seismic considerations for construction materials and methods. The

project will also include a contingency plan for inspection after an earthquake or flood.

- **Making Sure Cleanup Goals Are Met** - A contingency plan was established for areas where monitored natural recovery is used, so that if natural recovery is not proceeding acceptably after five years of monitoring, sediment cleanup would be required.
- **Protecting and Enhancing Wildlife Habitat** - Specific mitigation goals and requirements for fish and wildlife habitat were added.

Detailed descriptions of all the changes made as a result of public input are outlined on pages 18-19 of the Action Memo. Mitigation goals and requirements are discussed in the Action Memo on pages 22-23. The Action Memo is available on the EPA website or by request from Judy Smith.

Commonly Asked Questions

Can a CDF withstand a catastrophic event such as an earthquake fire or flood?

The Pacific Northwest is a seismically active region so EPA would not consider using a CDF if contaminants might be released during an earthquake. Our review of the EE/CA confirmed that the CDF was engineered to withstand catastrophic earthquake or flood without compromising the integrity of the structure. A contingency plan will be developed in the case of any earthquake or flood for quick inspection and repair of any berm problems. Waste is unlikely to be mobilized in even earthquake magnitudes which will cause heavy damage to office building type structures.

Will EPA require sediment from the future Portland Harbor to be placed in the Terminal 4 CDF?

No. The decision to dispose of dredged sediment in a CDF creates another option for the harbor-wide cleanup, but it provides no guarantees that any future material will be placed at Terminal 4. Sediment from another early action or the harbor-wide cleanup will only be placed in the CDF if the decision is supported by appropriate analysis that is subject to public review and comment.

Is it safe to construct a CDF so close to the residential areas of St. Johns and Linnton?

Many people in Linnton, St. Johns and Cathedral Park live in close proximity to Terminal 4 and their safety is a very important factor in this decision. Encapsulating materials in a CDF is much safer than the existing situation where uncontrolled contamination poses a risk of exposure for both people and wildlife. The sediment to be dredge will be wet when placed in the CDF and then capped, so the likelihood of dust escaping from the site or fire is virtually non-existent.

Did EPA choose the cheapest alternative?

Cost was one of the evaluation criteria used to evaluate the alternatives, but it was not the deciding factor. The costs for the alternatives ranged from \$23M to \$30M.

Why did EPA screen out treatment technology from further consideration in the EE/CA?

EPA screened out many treatment technologies from full consideration in our analysis of alternatives because they have not been proven on a large operational scale. However, it is possible that treatment of some types of contaminated sediments may make them suitable for disposal in a CDF.

What is EPA doing to mitigate the loss of wildlife and fish habitat that is lost as a result of the cleanup?

The Terminal 4 early action will provide for mitigation of fish habitat foregone as a result of the cleanup and will focus on the creation of habitat which is lacking in the lower Willamette for juvenile threatened and endangered salmon.

Why Build a Confined Disposal Facility (CDF) at Terminal 4?

EPA thought long and hard about the proposal to build a CDF at Terminal 4, particularly in view of the large number of concerns we heard. Ultimately, we felt the following reasons made the choice of building a CDF a responsible decision:

- Contaminated sediments pose a risk to people and aquatic organisms when left in an uncontrolled state in the Willamette River. The CDF will permanently contain these uncontrolled contaminants and will prevent people and aquatic life from coming into contact with them.
- Handling and transport of the contaminated sediments are minimized and kept within the Terminal 4 site.
- Construction activities will be confined to the Terminal 4 site with little impact to the local community.
- Short-term risk of sediment contamination is minimized because dredged materials are moved only a short distance and contaminated sediment will be isolated from the Willamette River.
- Long-term risk of recontamination of Terminal 4 is reduced because Slip 1 is eliminated.
- A CDF will create additional disposal options for future decisions for the larger Portland Harbor cleanup. Having a CDF readily available may decrease the cost and increase the speed of future cleanup actions.
- Using an on-site CDF allows the use of hydraulic dredging to remove the contamination, which may further reduce short-term impacts.

Next Steps

The next step in the Terminal 4 cleanup is designing and engineering the capping, the dredging and the confined disposal facility. Project engineers at the Port of Portland will develop detailed plans and specifications and then submit them to EPA for review and approval. The process will begin with a conceptual design review and will proceed in stages to the final design.

Public participation and review will be encouraged and welcomed during this very important phase of the cleanup process. Stay tuned for more information about involvement opportunities during the next year.

Background

Terminal 4 is located on the east side of the Willamette River just north of the St. Johns Bridge. It is the Port of Portland's oldest operating marine terminal. Historically, the terminal was used for loading and unloading petroleum products, pencil pitch, liquid fertilizer, soda ash, metals and agricultural products. Today, Terminal 4 is a multi-purposed facility that provides ship berths capable of handling grain, autos, forest products, steel and bulk materials.

In October 2003, the Port of Portland entered a legal agreement with EPA to assess and clean up Terminal 4 sediment contaminated with petroleum products, metals, pesticides and polychlorinated

biphenyls. The area being cleaned up extends west from the high water line to the edge of the navigation channel, and extends south from the downstream end of Berth 414 to the downstream edge of Berth 401, including Slip 1, Slip 3 and Wheeler Bay. Terminal 4 is located within the Portland Harbor Superfund Site, which was added to the National Priorities List in December 2000.

The Port of Portland is also actively working with the Oregon Department of Environmental Quality to clean up the upland part of the site to reduce and eliminate sources of contamination to river sediment.



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Portland, Oregon
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For More Information

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Visit Us on the Web

Terminal 4 information is available on the web at
<http://yosemite.epa.gov/r10/cleanup.nsf/sites/t4>

Port of Portland Terminal 4 project website:
http://www.portofportland.com/T4_EA_Home.aspx



Alternative formats are available upon request by calling Judy Smith at 503-326-6994.